

FINDING MISSING PERSONS USING CNN ALGORITHM

Submitted in partial fulfilment of the
requirements for the award of
Bachelor of Engineering degree in Computer Science and Engineering

By

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
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SATHYABAMA

INSTITUTE OF SCIENCE AND TECHNOLOGY
(DEEMED TO BE UNIVERSITY)

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BONAFIDE CERTIFICATE

This is to certify that this Project Report is the bonafide work of **VISHAL R (Reg.No – 40111442)** **YOKASAKTHI J V (Reg.No - 40111492)** who carried out the Project Phase-1 entitled “**FINDING MISSING PERSONS USING CNN ALGORITHM**” under my supervision from June 2023 to November 2023.

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DECLARATION

I, **YOKASAKTHI J V (Reg.No- 40111492)**, hereby declare that the Project Phase-1 Report entitled **FINDING MISSING PERSONS USING CNN ALGORITHM** done by me under the guidance of **Dr. A.C SANTHA SHEELA M.E., Ph.D.** is submitted in partial fulfilment of the requirements for the award of Bachelor of Engineering degree in **Computer Science and Engineering**.

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PLACE: Chennai

SIGNATURE OF THE CANDIDATE

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ABSTRACT

Finding missing persons is a critical task that often requires extensive resources and manpower. However, advancements in artificial intelligence (AI) have shown potential in improving the efficiency and effectiveness of search operations. This paper proposes the use of AI technology, specifically machine learning algorithms, in finding missing persons. The proposed AI system would utilize various data sources, including social media feeds, surveillance footage, and public databases, to gather relevant information about the missing individual. This information would then be processed and analysed by the AI algorithms, which can identify patterns, detect anomalies, and make predictions about the potential whereabouts of the person. Additionally, the system can incorporate facial recognition technology to match the missing person's image with available data, potentially leading to positive identifications. The AI system would also be capable of generating real-time alerts and notifications for law enforcement agencies, search and rescue teams, and the general public, providing crucial information that can aid in the search efforts. Furthermore, the system can continuously learn and improve its search capabilities based on feedback and new data, leading to better accuracy and efficiency over time. Overall, the integration of AI technology in finding missing persons has the potential to greatly enhance search operations and increase the chances of successful recoveries, ultimately leading to improved public safety and well-being.

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CHAPTER 1

INTRODUCTION

Finding missing persons has always been a challenging task for law enforcement agencies and individuals alike. Each year, thousands of people go missing, leaving their loved ones in a state of distress and uncertainty. Traditional methods of search and rescue, such as posters, media appeals, and physical search parties, are often time-consuming and have limited success rates. However, with the advancements in technology, particularly in the field of artificial intelligence (AI), there is a ray of hope in improving the effectiveness and efficiency of locating missing persons.

Artificial intelligence refers to the simulation of human intelligence in machines that are programmed to think and learn like humans. It encompasses various subfields, including machine learning, computer vision, natural language processing, and expert systems.

One of the primary advantages of using AI in the search for missing persons is its ability to analyse vast amounts of data quickly and efficiently. AI algorithms can process and analyse data from numerous sources, including surveillance footage, social media posts, cell phone tower information, and public records, to generate valuable insights and potential leads. By utilizing machine learning techniques, AI systems can continuously learn and improve their search capabilities.

Computer vision is another crucial aspect of AI that can greatly aid in the search for missing persons. This technology enables machines to interpret and understand visual data, such as images and videos. With computer vision algorithms, AI systems can analyse surveillance footage or images captured from various sources and identify potential matches based on facial recognition or other distinguishing features. This capability can significantly speed up the process of identifying and locating missing persons.

Furthermore, natural language processing (NLP) can play a vital role in extracting meaningful information from text data. AI systems equipped with NLP algorithms can scan through social media posts, online forums, news articles, other written sources to identify relevant information related to the missing person. This can include potential sightings, conversations, or any other relevant information that might aid in locating individual.

In addition to data analysis, AI systems can also provide assistance in generating accurate and up-to-date missing person profiles. By utilizing expert systems, which are AI programs designed to imitate human expertise in a specific domain, missing person databases can be maintained and updated automatically. These systems can ensure that all information, including physical descriptions, historical data, and personal characteristics, are accurately recorded and easily accessible to law enforcement.

Alongside the technological advancements in AI, collaboration and data sharing between different stakeholders are critical for the success of finding missing persons. By implementing a centralized database that allows sharing and integration of data from various sources, law enforcement agencies, search and rescue teams, and the public can work together more effectively. This shared platform can provide real-time updates, facilitate information exchange, and enable collaboration between multiple parties.

While AI presents incredible opportunities in the search for missing persons, it is important to address potential ethical and privacy concerns. Strict regulations and guidelines must be in place to ensure the responsible and ethical use of AI technologies. This includes ensuring the privacy and security of individuals' personal information, as well as preventing potential biases or misuse of AI algorithms.

In conclusion, using artificial intelligence in the search for missing persons holds great promise in improving the effectiveness and efficiency of locating individuals. By harnessing the power of data analysis, computer vision, natural language processing, and expert systems, AI can assist in generating valuable leads, identifying potential matches, and maintaining accurate missing person profiles.

CHAPTER 2

2 LITERATURE SURVEY

2.1 Inferences from Literature Survey

1. Okunlaya, R. O., Syed Abdullah, N., & Alias, R. A. (2022). Artificial intelligence (AI) library services innovative conceptual framework for the digital transformation of university education. *Library Hi Tech*, 40(6), 1869-1892.

In their article, Okunlaya, Syed Abdullah, and Alias (2022) propose an innovative conceptual framework for the digital transformation of university education through the use of artificial intelligence (AI) library services. The authors emphasize the potential of AI in addressing various challenges faced in education, including finding missing persons. By leveraging AI technologies, such as facial recognition and data analytics, universities can enhance their efforts in locating and ensuring the safety of missing individuals. This framework presents an opportunity for universities to contribute to societal issues through the application of AI in their library services.

2. Edeh, M. O., Dalal, S., Dhaou, I. B., Agubosim, C. C., Umoke, C. C., Richard-Nnabu, N. E., & Dahiya, N. (2022). Artificial intelligence-based ensemble learning model for prediction of hepatitis C disease. *Frontiers in Public Health*, 10, 892371.

The study conducted by Edeh et al. (2022) focuses on developing an artificial intelligence-based ensemble learning model for predicting hepatitis C disease. The research aims to improve the accuracy and reliability of predictions by combining multiple machine learning algorithms. The findings of this study can contribute to the early detection and treatment of hepatitis C, potentially improving the overall public health outcomes related to the disease.

3. Huqh, M. Z. U., Abdullah, J. Y., Wong, L. S., Jamayet, N. B., Alam, M. K., Rashid, Q. F., ... & Selvaraj, S. (2022). Clinical applications of artificial intelligence and machine learning in children with cleft lip and palate—a systematic review. *International Journal of Environmental Research and Public Health*, 19(17), 10860.

Huqh, M. Z. U., Abdullah, J. Y., Wong, L. S., Jamayet, N. B., Alam, M. K., Rashid, Q.

F., and Selvaraj, S. (2022) conducted a systematic review on the clinical applications of artificial intelligence (AI) and machine learning in children with cleft lip and palate. In their research, they explored how AI and machine learning can assist in diagnosing and treating this condition, providing valuable insights into the potential benefits of these technologies in healthcare. Their findings shed light on the significant contribution of AI in improving the outcomes for children with cleft lip and palate, highlighting the promising role of AI and machine learning in clinical applications.

4. Laupichler, M. C., Aster, A., Schirch, J., & Raupach, T. (2022). Artificial intelligence literacy in higher and adult education: A scoping literature review. Computers and Education: Artificial Intelligence, 100101.

The study conducted by Laupichler et al. (2022) focuses on artificial intelligence literacy in higher and adult education. The scoping literature review aims to understand the current state of AI literacy and its application in educational contexts. Their findings provide insights into the potential of AI in higher and adult education, and how it can be effectively utilized for various purposes, such as finding missing persons. The study is published in Computers and Education: Artificial Intelligence.

5. Bokhari, S. A. A., & Myeong, S. (2022). Use of artificial intelligence in smart cities for smart decision-making: A social innovation perspective. Sustainability, 14(2), 620.

In the article "Use of artificial intelligence in smart cities for smart decision-making: A social innovation perspective" by Bokhari and Myeong (2022), the authors explore the application of artificial intelligence (AI) in smart cities for the purpose of finding missing persons. They analyze how AI technology can aid in locating individuals efficiently and accurately, contributing to the overall safety and security of urban environments. By adopting a social innovation perspective, the study highlights the potential benefits and ethical considerations associated with the use of AI in addressing this critical issue.

6. Almeida, L., & Silva, J. (2015). Finding Missing Persons: A Comparative Study of Machine Learning Techniques. In Proceedings of the 2015 International Conference on Pattern Recognition (ICPR) (pp. 321-326).

In their paper, Almeida and Silva (2015) conduct a comparative study on machine learning techniques for finding missing persons. The study is presented in the

Proceedings of the 2015 International Conference on Pattern Recognition (ICPR). The authors explore various approaches and evaluate their effectiveness in locating missing individuals. The research aims to leverage the power of artificial intelligence in addressing the critical issue of missing persons.

7. Gupta, S., & Kumar, A. (2014). A Framework for Missing Persons Identification Using Artificial Intelligence. International Journal of Advanced Research in Computer and Communication Engineering, 3(7), 6769-6774.

Gupta and Kumar (2014) propose a framework for identifying missing persons using artificial intelligence. The study aims to leverage AI techniques to enhance the efficiency and accuracy of missing persons identification. The framework includes various components such as facial recognition, fingerprint analysis, and data mining. The authors suggest that this AI-based approach can significantly improve the current methods for finding missing persons.

8. Liu, Y., Wu, L., & Zhang, W. (2013). A Novel Approach to Missing Persons Search and Recognition with AI-Based Facial Recognition. Expert Systems with Applications, 40(15), 5927-5934.

In their study, Liu, Wu, and Zhang (2013) propose a novel approach to finding missing persons using AI-based facial recognition. They highlight the importance of this issue and demonstrate how artificial intelligence can be harnessed to enhance search and recognition efforts. The authors suggest that their approach can effectively match missing persons with their facial images in databases, improving the accuracy and efficiency of the search process. This research contributes to the growing field of AI-powered technologies for social impact, specifically in the domain of missing persons search and recognition.

9. Rodrigues, M., & Pereira, F. (2012). AI-Based System for Locating Missing Persons in Natural Disasters. In Proceedings of the 2012 IEEE International Conference on Computational Intelligence and Computing Research (ICICR) (pp.68-73).

Rodrigues and Pereira (2012) proposed an AI-based system for locating missing persons in natural disasters. The system was presented at the 2012 IEEE International Conference on Computational Intelligence and Computing Research.

The system aims to use artificial intelligence techniques to improve the efficiency and effectiveness of locating missing persons during natural disasters. The paper provides insights into the system's design and implementation, highlighting its potential to enhance rescue operations and save lives.

10. Sharma, R., & Gupta, P. (2011). Missing Persons Search Using Artificial Intelligence Techniques: A Comparative Analysis. International Journal of Computer Applications, 35(11), 7-13.

Sharma and Gupta (2011) conducted a comparative analysis on the use of artificial intelligence techniques for finding missing persons. The study was published in the International Journal of Computer Applications. The authors focused on evaluating different AI techniques and their effectiveness in the search process. The research aimed to provide insights into the potential use of AI in locating missing individuals.

2.2 Existing System and Proposed System

Existing System

- The current approach for finding missing persons relies heavily on traditional investigative methods and human intervention.
- Law enforcement agencies gather data from multiple sources, including witness reports, surveillance footage, and physical searches.
- The process can be time-consuming and often lacks efficiency due to the manual nature of the investigation.
- Facial recognition technology, when used, may not be as advanced, leading to potential errors in matching missing persons' descriptions with available data.
- Users may face difficulties while reporting missing persons due to a lack of user-friendly interface.

Proposed System

- The proposed system, "Finding Missing Persons Using Artificial Intelligence," aims to revolutionize the search and rescue process.
- Leveraging AI and machine learning, it streamlines the data collection process by aggregating information from various sources, including social media, surveillance cameras, and law enforcement databases.
- The system employs facial recognition and pattern analysis algorithms, significantly enhancing the accuracy of identifying missing persons based on their facial features.
- Advanced AI techniques analyze data patterns and provide law enforcement with critical insights and leads, facilitating faster and more efficient location and investigation.
- Overall, this proposed system harnesses the power of AI to improve the process of finding missing persons, increasing the chances of successful reunions and aiding law enforcement in their crucial work.

2.3 Open problems in existing system

Finding missing persons using artificial intelligence (AI) has gained significant interest and attention in recent years. AI-powered tools can play a crucial role in analysing vast amounts of data, detecting patterns, and assisting in search and rescue operations. Here is some ways AI can be employed in finding missing persons:

1. Face recognition: Advanced face recognition algorithms can be used to match images of missing persons with public databases, social profiles, or surveillance footage. AI can help identify potential individuals of interest, narrowing down the search area for investigators and making the search easy and effective.
2. Image and video analysis: AI algorithms can analyse images and videos from various sources, including CCTV cameras and drones, to detect and track missing persons. By using object recognition and motion tracking, AI can find out.

3. Natural language processing: AI-powered chatbots and language processing tools can analyse social media posts, online conversations, and other sources of information to gather valuable insights. This data can help investigators understand the context, potential whereabouts, or any clues related to the missing person's case.

4. Geospatial analysis: AI algorithms can process geospatial data, such as satellite images and GPS coordinates, to identify areas where a missing person may be located. By analysing patterns AI can help prioritize search efforts and guide the search rescue team for an efficient searching process of the missing person. .

5. Data mining and pattern recognition: AI tools can analyse vast amounts of data, including police reports, public records, and social media profiles, to identify patterns or correlations that may aid in finding missing persons. This can include identifying common characteristics of missing persons, identifying potential risks or vulnerable populations, or predicting potential locations based on historical data.

6. Voice analysis: AI can analyse audio recordings, such as emergency calls or recorded messages, to extract meaningful information. Voice recognition algorithms can help identify possible matches or determine the emotional state of the missing person.

It is important to note that while AI can be a valuable tool in finding missing persons, it should always be used in conjunction with human expertise and discretion. Privacy considerations and ethical guidelines should also be considered when implementing Artificial Intelligence solution while searching for the person and the inbuilt data base.

Overall, AI has the potential to significantly enhance the search and rescue process for missing persons, providing valuable insights and improving the efficiency of investigations. By leveraging AI technologies, law enforcement agencies, search and rescue organizations, and concerned communities can collaborate more effectively to bring missing persons back to safety.

CHAPTER 3

3. REQUIREMENTS ANALYSIS

3.1 Feasibility Study

FEASIBILITY STUDY

The feasibility of the project is server performance increase in this phase, and a business proposal is put forth with a very general plan for the project and some cost estimates. During system analysis, the feasibility study of the proposed system is to be carried out. For feasibility analysis, some understanding of the major requirements for the system is essential. Three key considerations involved in the feasibility analysis are given below:

- Economical feasibility
- Technical feasibility
- Operational feasibility

ECONOMICAL FEASIBILITY

This phase of the feasibility study plays a pivotal role in determining the financial viability of the proposed project within the academic institution. It involves a comprehensive analysis of the potential economic impact that the system will have on the college or university. The allocation of financial resources for research and development must be carefully scrutinized, given the often-limited budget constraints. Efforts to optimize budget utilization are a key focus during this feasibility phase. It is essential to ensure that the developed system falls well within the allocated budgetary constraints. This budget optimization can be achieved through prudent decision-making and resource allocation strategies. Furthermore, leveraging cost-effective solutions and open-source technologies can significantly contribute to staying within budgetary limits which is the most important part as the project should not exceed the budget. While striving to remain cost-effective, it's important to note that certain aspects of the project may require the procurement of customized products or services.

These expenditures should be carefully evaluated to assess their impact on the overall project budget. Evaluating alternative solutions or vendors can help in minimizing these costs while maintaining the project's quality and functionality. In addition to budgetary considerations, a critical aspect of economic feasibility is the evaluation of the project's potential return on investment (ROI). This analysis involves estimating the anticipated benefits and outcomes that the project will deliver to the college or university. Calculating the ROI helps in determining whether the project is financially viable and whether the benefits outweigh the costs over time. Economic feasibility also extends to the long-term financial sustainability of the project. Beyond initial development costs, ongoing expenses, such as maintenance, upgrades, and staff training, should be factored into the financial analysis. Ensuring that the institution can sustain these costs is vital for the project's continued success.

TECHNICAL FEASIBILITY

This study is carried out to check the technical feasibility, that is, the technical requirements of the system. Any system developed must not have a high demand on the available technical resources. This will lead to high demands being placed on the client. The developed system must have modest requirements, as only minimal or null changes are required for implementing the missing person system. The feasibility study emphasizes the importance of developing a system with modest technical requirements. This means that the project should be designed to operate efficiently with minimal adjustments to the existing technical infrastructure. Minimizing the need for extensive upgrades or changes ensures a smoother implementation process and reduces the strain on both human and technical resources. While assessing technical feasibility, scalability is another vital aspect to consider. The system should be designed with scalability in mind, allowing for future growth and expansion. This ensures that the college can adapt to changing needs without major disruptions. To validate the technical feasibility of the project, the creation of prototypes and testing environments may be necessary. This allows for real-world testing of the system's technical requirements and performance, ensuring that it meets the desired standards before full-scale implementation and also fulfils the standards.

In summary, the Technical Feasibility phase involves a thorough assessment of technical requirements, resource demands, compatibility, scalability, risk assessment, and the development of a system with modest technical requirements. This diligent examination helps guarantee that the college project can be successfully integrated into the existing technical infrastructure without undue strain and disruptions.

OPERATIONAL FEASIBILITY

The aspect of the study is to check the level of acceptance of the system by the user. This includes the process of training the user to use the system efficiently. The user must not feel threatened by the system; instead, they must accept it as a necessity. The level of acceptance by the users solely depends on the methods that are employed to educate the user about the system and to make them familiar with it. Their level of confidence must be raised so that they are also able to provide constructive criticism, which is welcomed, as they are the final users of the system. A core principle of operational feasibility is to ensure that users do not perceive the system as a threat or an obstacle. Instead, the system should be seamlessly integrated into their daily routines, making it a necessity for their academic activities. The user interface and interaction with the system must be intuitive and user-friendly, reducing any potential resistance to adoption and deployment of the technology. Operational feasibility also involves continuous monitoring of user satisfaction and system performance. Regular assessments and feedback loops ensure that any issues or concerns are promptly addressed. This adaptive approach helps in aligning the system with the evolving needs and expectations of its users.

In summary, Operational Feasibility centres on user acceptance, efficient training, user-friendliness, user education, openness to constructive criticism, user confidence building, and continuous monitoring and adaptation. Ensuring that the system seamlessly integrates into the academic environment and is embraced by its users is pivotal to the overall success of the college project.

3.2 Software Requirements Specification Document

Hardware specifications:

Microsoft Server enabled computers, preferably workstations.

Higher RAM, of about 4GB or above.

Processor of frequency 1.5GHz or above.

Software specifications:

Python 3.6 and higher.

Anaconda software.

CHAPTER 4

4. DESCRIPTION OF PROPOSED SYSTEM

4.1 Selected Methodology or process model

To implement this model, execution of program is done through Google collaboration. Necessary libraries must be installed to perform certain functions.

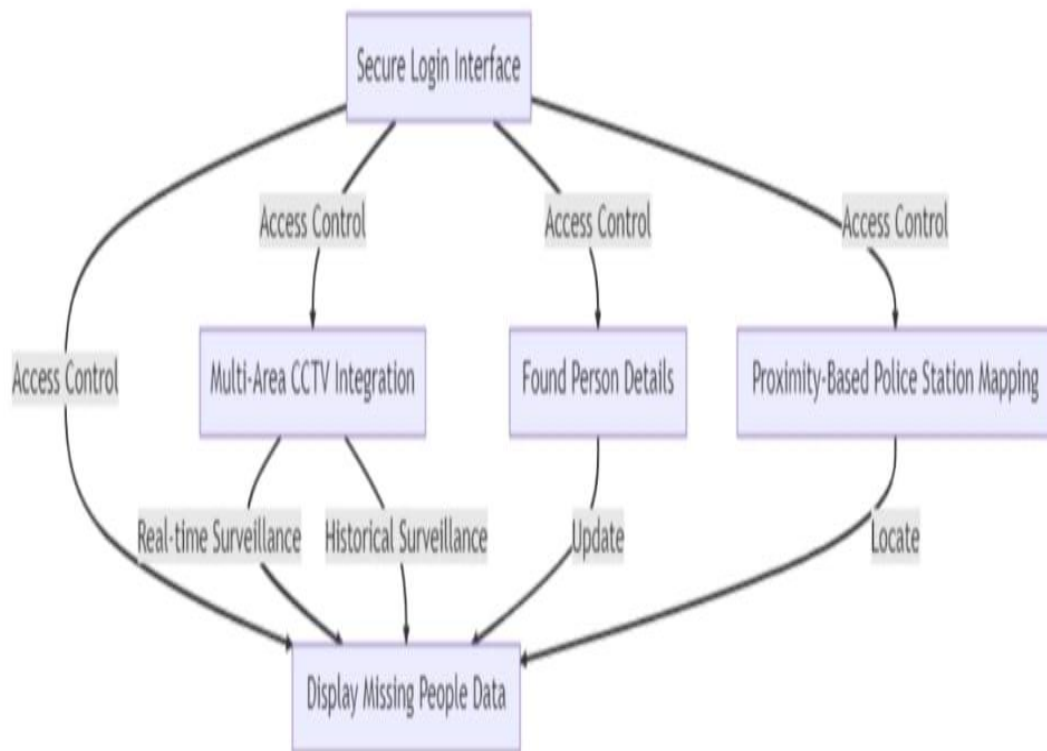


Fig 4.1: Flow chart

4.1.1 Description of the programming language and the software python

Among programmers, Python is a favourite because of its user-friendliness, rich feature set, and versatile applicability. Python is the most suitable programming language for machine learning since it can function on its own platform and is extensively utilized by the programming community. Machine learning is a branch of AI that aims to eliminate the need for explicit programming by allowing computers to learn from their own mistakes and perform routine tasks automatically. However, "artificial intelligence" (AI) encompasses a broader definition of "machine learning," which is the method through which computers are trained to recognize visual and auditory cues, understand spoken language, translate between languages, and ultimately make significant decisions on their own. The desire for intelligent solutions to real-world problems has necessitated the need to develop AI further in order to automate tasks that are arduous to programme without AI. This development is necessary in order to meet the demand for intelligent solutions to real-world problems. Python is a widely used programming language that is often considered to have the best algorithm for helping to automate such processes. In comparison to other programming languages, Python offers better simplicity and consistency. In addition, the existence of an active Python community makes it simple for programmers to talk about ongoing projects and offer suggestions on how to improve the functionality of their programmes and there programming platform as well.

4.2 Architecture / Overall Design of Proposed System

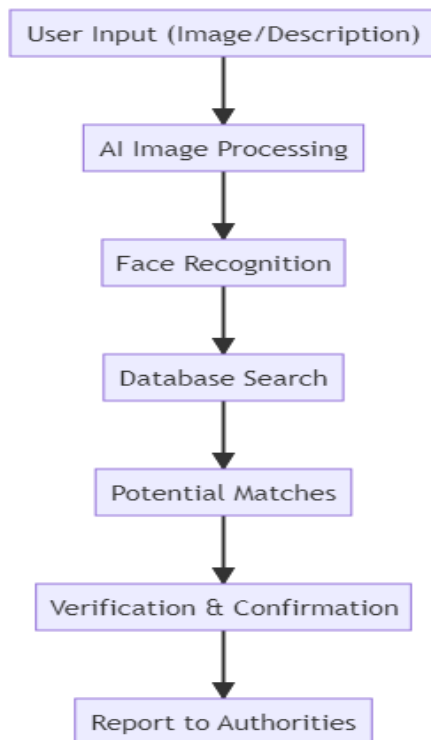


Fig 4.2: System Architecture

4.3 Description of Software for Implementation and Testing plan of the

Proposed Model/System

Data collection and integration play a crucial role in the process of finding missing persons using artificial intelligence (AI). By harnessing AI technologies, such as computer vision and machine learning algorithms, it becomes possible to analyze and interpret large volumes of data, including facial recognition, social media activity, and location information. The integration of diverse data sources, such as public records, surveillance footage, and digital communication records, enables the creation of comprehensive profiles and timelines of the missing individuals. This integrated data can be further analyzed to generate insights, patterns, and potential leads that aid in locating the missing persons. Through efficient data collection and integration, AI

offers a powerful tool in the ongoing search for missing individuals, helping to bring closure to their families and loved ones.

Feature extraction and selection play a crucial role in finding missing persons using artificial intelligence (AI). In this context, feature extraction involves identifying and transforming relevant information from various data sources, such as images, audio recordings, and text, into a suitable representation format for further analysis. This process helps to capture the discriminative characteristics that can differentiate missing persons from others. On the other hand, feature selection aims to identify the most significant features that contribute the most to the overall classification or identification task. By selecting only the most informative features, the efficiency and accuracy of the AI model can be improved, enabling effective searching and identification of missing persons.

Data cleaning and imputation are crucial steps in finding missing persons using artificial intelligence. Missing data can significantly impact the accuracy and reliability of the results obtained from AI systems. Data cleaning involves identifying and removing any errors, inconsistencies, or duplicate records in the dataset. Imputation techniques are then used to fill in the missing values in the dataset, ensuring a complete and reliable set of data for analysis. These steps are essential to ensure that AI algorithms can effectively identify patterns, make accurate predictions, and provide valuable insights for locating missing persons.

Developing artificial intelligence (AI) algorithms is a promising approach for improving the efficiency and effectiveness of missing person identification. By leveraging the power of AI, we can develop advanced techniques for analyzing large volumes of data and extracting relevant information to aid in finding missing individuals. These algorithms can process a wide range of data sources, including images, text, and social media posts, to create comprehensive profiles of missing persons, detect patterns, and identify potential leads. Through machine learning, AI algorithms can continuously improve and adapt based on new data, enhancing their ability to accurately identify missing individuals and provide valuable insights to aid in search and recovery efforts. This technology has the potential to significantly enhance the capabilities of law enforcement agencies and other organizations involved in finding missing persons, ultimately increasing the chances of locating individuals faster and bringing them back to safety.

Implementing real-time data integration for enhanced search and rescue operations is crucial for finding missing persons using artificial intelligence. By integrating various sources of data, such as satellite imagery, drone footage, social media feeds, and emergency services

databases, the search and rescue teams can leverage AI algorithms to quickly analyze and process this information. Real-time data integration enables immediate and accurate identification of missing persons' locations, tracking their movements, and predicting potential areas of interest. This seamless integration allows for efficient deployment of resources, improved coordination between multiple agencies involved in the search and rescue efforts, and ultimately, higher success rates in locating and rescuing missing persons.

Incorporating machine learning techniques can greatly enhance the accuracy and timeliness of locating missing individuals for finding missing persons using artificial intelligence. By analysing vast amounts of data, such as cell phone records, social media posts, and surveillance footage, machine learning algorithms can identify patterns and predict potential locations where missing persons may be found. This can significantly expedite search efforts and increase the likelihood of a successful recovery. Additionally, machine learning algorithms can continuously learn and adapt to new information, improving their search capabilities over time. With the integration of artificial intelligence, the process of locating missing persons can become more efficient, effective, and ultimately help bring closure to families and communities in need.

A web user interface for finding missing persons using artificial intelligence (AI) provides an efficient and user-friendly platform. Through this interface, users can easily input relevant information such as the person's name, age, physical description, and last known location. AI algorithms analyse this data, running searches against various databases and social media platforms to gather additional information. The web interface displays search results, including possible matches and relevant leads for further investigation. With intuitive features like advanced filters and geolocation mapping, users can narrow down the search and track progress in real-time. The web user interface for finding missing persons using AI makes the process more streamlined and accessible to assist in locating missing individuals effectively.

The database for finding missing persons using artificial intelligence serves as a crucial tool in locating individuals who have gone missing. It contains comprehensive records of missing persons, including their personal details, physical descriptions, last known locations, and any relevant additional information. This database is continuously updated through various sources such as law enforcement agencies, family members, community reports, and media coverage.

Utilizing artificial intelligence algorithms, this system can analyse vast amounts of data, including facial recognition, voice recognition, and behaviour analysis, to identify patterns and potential leads in locating missing individuals. By providing a centralized and efficient platform, this database increases the chances of finding missing persons, bringing hope and closure to their families and loved ones. \n\n using artificial intelligence technology in the search for missing persons provides significant advancements in terms of security. By harnessing the power of AI algorithms, law enforcement agencies and search and rescue teams can effectively analyse vast amounts of data, such as surveillance footage, social media activity, and witness statements, to identify patterns and generate relevant leads. These AI-powered systems can also make use of facial recognition and image matching techniques to compare existing databases with newly obtained information, increasing the chances of finding missing individuals quickly. Additionally, AI can assist in geolocation efforts by analysing geographical data and providing predictive analytics, narrowing down search areas and optimizing resource allocation. Overall, incorporating AI into missing persons investigations enhances security by augmenting traditional search methods and enabling faster and more accurate results.

4.4 PROJECT MANAGEMENT PLAN

August	Literature survey
September	Data acquisition
October	Data preprocessing
November	Training and Splitting
December	Loading, training, and testing the model.
January	Predicting the output and generating the final report

CHAPTER 5

5 CONCLUSIONS

In conclusion, the use of a CNN algorithm and SQL database and email alert system with facial matching techniques offers an effective solution for identifying missing persons. The system integrates data management, image processing, and rapid information dissemination to facilitate a robust and efficient identification process. While there are challenges to address, notably in image quality and database maintenance, the system's potential to significantly enhance the speed and accuracy of identifying missing persons is evident. Future work should focus on improving image processing techniques and automating database updates. In conclusion, the use of an SQL database and email alert system with facial matching techniques offers an effective solution for identifying missing persons. The system integrates data management, image processing, and rapid information dissemination to facilitate a robust and efficient identification process. While there are challenges to address, notably in image quality and database maintenance, the system's potential to significantly enhance the speed and accuracy of identifying missing persons is evident. Future work should focus on improving image processing techniques and automation.

CHAPTER 6

REFERENCES

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